REMARKS

Office Action

In the Office Action mailed on July 25, 2006, the Examiner rejected claims 1-20 under 35 U.S.C. § 102(e) as being anticipated by Meyer et al., U.S. Patent No. 5,933,812 (hereinafter "Meyer"). For the reasons set more fully below, Applicant respectfully disagrees that Meyer teaches each and every limitation of claims 1-20 as presented. Additionally, Applicant submits that claims 1-20 are non-obvious in light of Meyer and any of the other references of record in this case, either alone or in combination.

Claim 1

Claim 1 requires an optical transmitter that generates light pulses in accordance with an electrical data signal, but does not generate a light pulse in the absence of an electrical data signal. The Meyer reference does not teach or suggest such an optical transmitter. In Meyer, the optical transmitter is an infrared LED, D2, (FIG. 17A). This LED is also coupled to ground through a visible light LED, D1. The purpose of the LED, D1, "is to indicate that the terminal is done with its current operation and is ready for the next step." *Meyer,* col.17, lines 62-64. To indicate that the terminal is ready for its next step, the visible LED, D1, is illuminated when no data is being transmitted by the microprocessor. Specifically, bit 5 of U8 is set to a logical zero (0). U8 is depicted in FIG. 17D and corresponds to the Q5 output of that integrated circuit. That output is provided as the signal LED- to pin 13 of U18D as shown in FIG.

17A. This logical zero (0) drives the output 11 of the AND gate to a logical zero (0) state so that Q3 is turned on. When Q3 is turned on, the IR LED, D2, and the visible LED, D1, are illuminated. Thus, the circuit of Meyer expressly teaches away from the claim limitation of claim 1, namely, that the optical transmitter not generate a light pulse in the absence of an electrical data signal. Thus, the method of operation described in Meyer illuminates the visible LED to indicate data entry is complete. This illumination occurs without taking the microprocessor out of the idle mode so energy is conserved. *Meyer,* col. 18, lines 1-9. When the microprocessor is in the idle mode, no data is being presented to the optical transmitter. When the microprocessor is placed in the normal operating mode to transmit data, the state of Q5 of U8 must be changed in order for the output 11 of the AND gate to follow the data presented on the serial transmission (TxD) line coupled to the AND gate on its input 12.

Additionally, claim 1 requires that the optical receiver receive a continuous light signal from an external device in the absence of a data signal at the external device. There is no teaching or suggestion in Meyer that the phototransistor Q1 continuously receive light to provide an indication that no data signal is present at an external device. Additionally, claim 1 requires that a transmitter not generate light in the absence of a data signal and that the receiver receives a light signal in the absence of a data signal. This inverse relationship between an optical transmitter and an optical receiver is likewise neither taught nor suggested by the Meyer reference.

For at least these reasons, claim 1 is patentable over all the references of record, either alone or in combination.

Claim 2

Claim 2 depends from claim 1 and is patentable for the reasons discussed above with respect to claim 1. Additionally, claim 2 requires that the optical transmitter be a light emitting diode and the optical receiver be a phototransistor. The Meyer reference does not teach or suggest the use of a light emitting diode for an optical transmitter. Instead, the visible light emitting diode of Meyer is used as an indication of the status of the portable transaction terminal. Data transmission is performed by the portable transaction terminal through the infrared LED, instead of the visible light LED. Even if the transmission of so-called "dummy" data, as taught by the Meyer reference at col. 17, lines 65-66, is considered, such a teaching would not anticipate nor render obvious claim 2 because claim 2 requires that the LED of the transmitter and the phototransistor of the optical receiver have an inverse polarity in the absence of a data signal. For at least these reasons, claim 2 is patentable over all the references of record, either alone or in combination.

Claim 3

Claim 3 depends from claim 2 and is patentable for the reasons discussed above with respect to claim 2 and claim 1. Additionally, claim 3 requires that the LED be a standard LED. There is no teaching or suggestion in Meyer that a

standard LED be used in an optical transmitter so it does not generate a light pulse in the absence of an electrical data signal. For at least these reasons, claim 3 is patentable over all the references of record, either alone or in combination.

Claim 4

Claim 4 depends from claim 2 and is patentable for the reasons discussed above with respect to claim 2 and claim 1. Additionally, claim 4 requires the LED generate an intense light pulse. There is no disclosure of generating an intense light pulse with a LED in the Meyer reference. More particularly, the Meyer reference does not teach or suggest that a LED that can generate an intense light pulse not be operated in the absence of an electrical data signal. For at least these reasons, claim 4 is patentable over all the references of record, either alone or in combination.

Claim 5

Claim 5 depends from claim 2 and is patentable for the reasons discussed above with respect to claim 2 and claim 1. Additionally, claim 5 requires that the phototransistor be a sensitive transistor. There is no teaching in Meyer that the transistor, Q1, be a sensitive phototransistor. More particularly, the Meyer reference does not teach or suggest the use of a sensitive phototransistor in an optical receiver that continuously receives a light pulse from an external device in the absence of a data signal at the external device. For at least these reasons,

claim 5 is patentable over all the references of record, either alone or in combination.

Claim 6

Claim 6 depends from claim 1 and is patentable for the reasons discussed above with respect to claim 1. Additionally, claim 6 requires that the probe include a coupler for securing the housing to an external device so the optical transmitter and receiver are in close proximity to the external device for the purpose of optical communication with at least one low intensity indicator light of the external device. The Meyer reference does not teach or suggest a coupler that enables an optical transmitter and an optical receiver of a probe to be in close proximity to a low intensity indicator of an external device for optical communication. In fact, the Meyer reference expressly teaches away from this limitation. As set forth in Meyer, the infrared transmitter and receiver of the portable transaction terminal communicates with a corresponding infrared port in a docking station. *Meyer,* col. 7, lines 14-18. The infrared port of the docking station does not operate as a low intensity indicator light for the docking station. Therefore, the portable transaction terminal does not communicate with an indicator light of the docking station and the limitation of claim 6 is not disclosed in Meyer.

Although the Meyer reference teaches that the visible light LED of the portable terminal may operate as an indicator light to call a server when transaction data entry by a guest has been completed, *Meyer,* col. 7, lines 19-24,

this LED is not used for optical communication with any optical transmitter or receiver. As already noted, the infrared LEDs are used for communication. The indicator LED of the portable terminal is not used for the communication between devices. Therefore, Meyer does not teach or suggest a coupler that enables optical communication with a low intensity indicator light of an external device. For at least these reasons, claim 6 is patentable over all references of record, either alone or in combination.

Claim 7

Claim 7 is directed to a probe for bi-directional optical communication with a device external to the probe. The probe is required to include an optical transmitter that generates a light signal having a logical polarity that is the opposite of the logical polarity of the light signal generated by an indicator light associated with an external device with which the communication probe is communicating. The Meyer reference fails to teach or suggest such a limitation. In the Meyer reference, the portable terminal is an external device to the docking station and the visible LED, D1, operates to indicate a status of the terminal. This visible LED, however, does not generate a light signal that is received by an optical receiver of a probe. If the docking station is considered a probe, then no optical communication with the visible LED can occur because the docking station only has an infrared transmitter and an infrared receiver. In the reverse scenario, the docking station has no indicator light that can communicate with the portable terminal. Consequently, the infrared transmitters and receivers of the

portable terminal and docking station of Meyer do not operate as indicator lights nor do the associated transmitter/receiver pairs communicate with opposite polarities. For at least these reasons, claim 7 is patentable over all references of record, either alone or in combination.

Claim 8

Claim 8 depends from claim 7 and is patentable for the reasons discussed above with respect to claim 7. Additionally, claim 8 requires that the optical transmitter be a light emitting diode and the optical receiver be a phototransistor. The Meyer reference does not teach or suggest the use of a light emitting diode for an optical transmitter. Instead, the visible light emitting diode of Meyer is used as an indication of the status of the portable transaction terminal. Data transmission is performed by the portable transaction terminal through infrared LEDs, instead of the visible light LED. Even if the transmission of "dummy" data, as taught by the Meyer reference, col. 17, lines 65-66, is considered, such a teaching would not anticipate nor render obvious claim 8 because claim 8 requires that the LED of the transmitter and the phototransistor of the optical receiver have an inverse polarity in the absence of a data signal. For at least these reasons, claim 8 is patentable over all the references of record, either alone or in combination.

Claim 9

Claim 9 depends from claim 8 and is patentable for the reasons discussed above with respect to claim 8 and claim 7. Additionally, claim 9 requires that the LED be a standard LED. There is no teaching or suggestion in Meyer that a standard LED be used in an optical transmitter that does not generate a light pulse in the absence of an electrical data signal. Instead, Meyer teaches that the LED of an optical transmitter be an infrared LED. For at least these reasons, claim 9 is patentable over all the references of record, either alone or in combination.

Claim 10

Claim 10 depends from claim 8 and is patentable for the reasons discussed above with respect to claim 8 and claim 7. Additionally, claim 10 requires the LED generate an intense light pulse. There is no disclosure of a LED generating an intense light pulse in the Meyer reference. More particularly, the Meyer reference does not teach or suggest that an LED that can generate an intense light pulse not be operated in the absence of an electrical data signal. For at least these reasons, claim 10 is patentable over all the references of record, either alone or in combination.

Claim 11

Claim 11 depends from claim 8 and is patentable for the reasons discussed above with respect to claim 8 and claim 7. Additionally, claim 11

requires that the phototransistor be a sensitive transistor. There is no teaching in Meyer that the transistor, Q1, be a sensitive phototransistor. More particularly, the Meyer reference does not teach the use of a sensitive phototransistor in an optical receiver that continuously receives a light pulse from an external device in the absence of a data signal at the external device. For at least these reasons, claim 11 is patentable over all the references of record, either alone or in combination.

Claim 12

Claim 12 depends from claim 7 and is patentable for the reasons discussed above with respect to claim 7. Additionally, claim 12 requires that the probe include a coupler for securing the housing to an external device so the optical transmitter and receiver are in close proximity to the external device for the purpose of optical communication with at least one low intensity indicator light of the external device. The Meyer reference does not teach or suggest a coupler that enables an optical transmitter and an optical receiver of a probe to be in close proximity to a low intensity indicator of an external device for optical communication. In fact, the Meyer reference expressly teaches away from this limitation. As set forth in Meyer, the infrared transmitter and receiver of the portable transaction terminal communicates with a corresponding infrared port in a docking station. *Meyer,* col. 7, lines 14-18. The infrared port of the docking station does not operate as a low intensity indicator light for the docking station. Therefore, the portable transaction terminal does not communicate with an

indicator light of the docking station and the limitation of claim 12 is not disclosed in Meyer.

Although the Meyer reference teaches that the visible light LED of the portable terminal may operate as an indicator light to call a server when transaction data entry by a guest has been completed, *Meyer,* col. 7, lines 19-24, this LED is not used for optical communication with any optical transmitter or receiver. As already noted, the infrared LEDs are used for communication. The indicator LED of the portable terminal is not used for communication between devices. Therefore, Meyer does not teach or suggest a coupler that enables optical communication with a low intensity indicator light of an external device. For at least these reasons, claim 12 is patentable over all references of record, either alone or in combination.

Claim 13

Claim 13 is directed to a method for bi-directional optical communication. The Meyer reference does not teach or suggest such an optical communication method. As noted above with respect to claim 1, the Meyer reference does not teach or suggest the structure for generating light pluses in accordance with a data signal with the exception that no light pulses be generated in the absence of a data signal. Instead, Meyer teaches the generation of a light signal in the absence of a data signal.

Additionally, claim 13 requires that the optical receiver receive a continuous light signal from an external device in the absence of a data signal at

the external device. There is no teaching or suggestion in Meyer that the phototransistor Q1 continuously receive light from the docking station to provide an indication that no data signal is present at the docking station. Additionally, claim 13 requires that a transmitter not generate light in the absence of a data signal while the receiver receives a light signal in the absence of a data signal. This inverse relationship between an optical transmitter and an optical receiver is likewise neither taught nor suggested by the Meyer reference.

For at least these reasons, claim 13 is patentable over all the references of record, either alone or in combination.

Claim 14

Claim 14 depends from claim 13 and is patentable for the reasons discussed above with respect to claim 13. Additionally, claim 14 requires that the probe include a coupler for securing the housing to an external device so the optical transmitter and receiver are in close proximity to the external device for the purpose of optical communication through generated light pulses. The Meyer reference does not teach or suggest a coupler that enables an optical transmitter and an optical receiver of a probe to be in close proximity to a low intensity indicator of an external device for optical communication. In fact, the Meyer reference expressly teaches away from this limitation. As set fort in Meyer, the infrared transmitter and receiver of the portable transaction terminal communicates with a corresponding infrared port in a docking station. *Meyer,* col. 7, lines 14-18. The infrared port of the docking station does not operate as a

low intensity indicator light for the docking station. Therefore, the portable transaction terminal does not communicate with an indicator light of the docking station and the limitation of claim 14 is not disclosed by Meyer.

Although the Meyer reference teaches that the visible light LED of the portable terminal may operate as an indicator light to call a server when transaction data entry by a guest has been completed, *Meyer,* col. 7, lines 19-24, this LED is not used for optical communication with any optical transmitter or receiver. As already noted, the infrared LEDs are used for communication. The indicator LED of the portable terminal is not used for communication between devices. Therefore, Meyer does not teach or suggest a coupler that enables optical communication with a low intensity indicator light of an external device. For at least these reasons, claim 14 is patentable over all references of record, either alone or in combination.

Claim 15

Claim 15 is directed to a method for bi-directional optical communication. The method requires generation of a light signal having a logical polarity that is the opposite of the logical polarity of the light signal generated by an indicator light associated with an external device with which the communication probe is communicating. The Meyer reference fails to teach or suggest such a limitation. In the Meyer reference, the portable terminal is an external device to the docking station and the visible LED, D1, operates to indicate a status of the terminal. This visible LED, however, does not generate a light signal that is received by an

optical receiver of a probe. If the docking station is considered a probe, then no optical communication with the visible LED can occur because the docking station only has an infrared transmitter and an infrared receiver. In the reverse scenario, the docking station has no indicator light that can communicate with the portable terminal. Consequently, the infrared transmitters and receivers of the portable terminal and docking station of Meyer do not operate as indicator lights nor do the associated transmitter/receiver pairs communicate with opposite polarities. For at least these reasons, claim 15 is patentable over all references of record, either alone or in combination.

Claim 16

Claim 16 depends from claim 15 and is patentable for the reasons discussed with respect to claim 15. Additionally, claim 16 requires that the generation of a light signal represents a logical one (1) and that the reception of a light signal represents a logical zero (0). The Meyer reference does not teach or suggest this opposite polarity. Specifically, as discussed above, the infrared transmitter of the Meyer reference generates a light pulse in response to a logical zero (0) being transmitted by the microprocessor. Likewise, reception of a light signal represents a logical zero (0) to the microprocessor. Thus, the Meyer reference teaches the generation of a light signal to represent a logical zero (0) and the reception of a light signal representing a logical zero (0). Therefore, the limitation of claim 16 that a generated light signal represent a logical one (1) while a received light signal represents a logical zero (0) is neither taught nor

suggested by Meyer. For at least these reasons, claim 16 is patentable over all references of record either alone or in combination.

Claim 17

Claim 17 depends from claim 15 and is patentable for the reasons discussed with respect to claim 15. Additionally, claim 17 requires that the generation of a light signal represents a logical zero (0) and that the reception of a light signal represents a logical one (1). The Meyer reference does not teach or suggest this opposite polarity. Specifically, as discussed above, the infrared transmitter of the Meyer reference generates a light pulse in response to a logical zero (0) being transmitted to the microprocessor. Likewise, reception of a light signal represents a logical zero (0) at the microprocessor. Thus, the Meyer reference teaches the generation of a light signal to represent a logical zero (0) and the reception of a light signal representing a logical zero (0). Therefore, the limitation of claim 17 that a generated light pulse represent a logical zero (0) while a received light pulse represent a logical one (1) is neither taught nor suggested by Meyer. For at least these reasons, claim 17 is patentable over all references of record either alone or in combination.

Conclusion

For the reasons set forth above, all pending claims 1-17 are patentable over all references of record, either alone or in combination. Reexamination and allowance of all pending claims are earnestly solicited.

Respectfully submitted,
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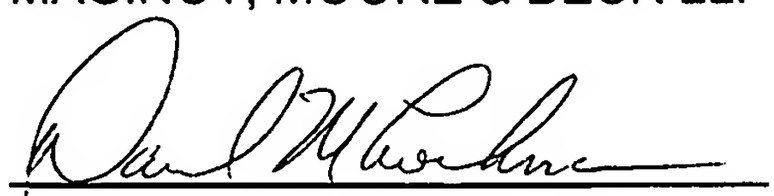

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